

EXHIBIT 32

APPENDIX K - Command Keyword Analysis

COLOR KEY	DESCRIPTION
Legacy Command Term	Command words used in pre-Cisco IOS systems, like UNIX or TOPS-20 or VAX/VMS
Industry Standard Term	A term or acronym used or defined in an IETF, IEEE, or similar document at the time the command was purportedly added to Cisco IOS; may also refer to MIB variables
Common Industry Term	A common industry term or acronym familiar to the expected user of the command at the time it was added to Cisco IOS; it may also describe standardized functionality

To the extent that a command keyword is not colored, it is not protected by copyright under at least the short words and phrases doctrine. Moreover, many of the non-colored keywords have nevertheless been adopted and used by the networking industry as part of the industry standard CLI. The adoption of the commands below is set forth in other charts attached to my Report.

Disputed Cisco Command Words				Additional Opinions	
aaa	accounting				
aaa	accounting	dot1x			
aaa	authentication	login			
aaa	authorization	config-commands			
aaa	authorization	console			
aaa	group	server	radius		
aaa	group	server	tacacs+		
address-family					
aggregate-address					
area	default-cost				
area	default-cost				
area	nssa				
area	nssa				
area	nssa	default-information-originate			
area	nssa	default-information-originate			
area	nssa	no-summary			
area	nssa	translate	type7	always	
area	nssa	translate	type7	always	
area	range				
area	range				
area	stub				
area	stub				
arp	timeout				
banner	login				
banner	motd				
bfd	all-interfaces				
bgp	client-to-client	reflection			
bgp	cluster-id				
bgp	confederation	identifier			
bgp	confederation	peers			
bgp	listen	limit			
bgp	log-neighbor-changes				
bgp	redistribute-internal				
boot	system				
channel-group					
class-map	type	control-plane			
clear	arp-cache				

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clear	counters			
clear	ip	arp		
clear	ip	bgp		
clear	ip	igmp	group	
clear	ip	mfib	fastdrop	
clear	ip	mroute		
clear	ip	msdp	sa-cache	
clear	ip	nat	translation	
clear	ip	ospf	neighbor	
clear	ipv6	neighbors		
clear	ipv6	ospf	force-spf	
clear	lldp	counters		"counters" is a common industry term
clear	lldp	table		
clear	mac	address-table	dynamic	"static" and "dynamic" are common industry terms
clear	spanning-tree	counters		
clock	set			
clock	timezone			
control-plane				
default-information	originate			
default-information	originate			
default-metric				
default-metric				
distance	bgp			
domain-id				
dot1x	max-reauth-req			
dot1x	pae	authenticator		
dot1x	port-control			
dot1x	reauthentication			
dot1x	system-auth-control			
dot1x	timeout	quiet-period		The term "timeout" is a common industry term that has particular meanings, depending on the context of how it is used
dot1x	timeout	reauth-period		
dot1x	timeout	tx-period		
enable	secret			
erase	startup-config			
errdisable	detect	cause	link-flap	
errdisable	recovery			
errdisable	recovery			
flowcontrol	receive			"receiving" and "sending" are common industry terms generally used to describe the direction data may be flowing
flowcontrol	send			
interface	ethernet			"interface" is a well-known networking industry term
interface	loopback			"loopback" is a well-known networking industry term, and is also used more broadly in the telecommunications industry
interface	port-channel			
interface	vlan			
ip	access-group			
ip	access-list			
ip	access-list	standard		
ip	address			
ip	as-path	access-list		
ip	community-list	expanded		
ip	community-list	standard		
ip	dhcp	smart-relay		

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ip	dhcp	smart-relay	global		
ip	dhcp	snooping			"snooping" is a term found in industry standard documents, but it is also a well-known networking term.
ip	dhcp	snooping	information	option	
ip	dhcp	snooping	vlan		
ip	domain	lookup			
ip	domain-name				
ip	ext-community-list	expanded			
ip	ext-community-list	standard			
ip	helper-address				
ip	host				
ip	http	client	source-interface		
ip	icmp	redirect			
ip	igmp	last-member-query-count			
ip	igmp	last-member-query-interval			
ip	igmp	query-interval			
ip	igmp	query-max-response-time			
ip	igmp	snooping			
ip	igmp	snooping	querier		
ip	igmp	snooping	vlan		
ip	igmp	snooping	vlan	immediate-leave	
ip	igmp	snooping	vlan	mrouter	"mrouter" is shorthand for multicast router
ip	igmp	snooping	vlan	static	"static" and "dynamic" are common industry terms
ip	igmp	startup-query-count			
ip	igmp	startup-query-interval			
ip	igmp	static-group			
ip	igmp	version			"version" in the context of routing protocols is understood to refer to the particular version of the protocol being run
ip	load-sharing				
ip	local-proxy-arp				
ip	msdp	cache-sa-state			
ip	msdp	default-peer			
ip	msdp	description			
ip	msdp	group-limit			
ip	msdp	keepalive			
ip	msdp	mesh-group			
ip	msdp	originator-id			
ip	msdp	peer			
ip	msdp	sa-filter	in		"sa" stands for "Source-Active" messages per the Multicast Source Discovery Protocol
ip	msdp	sa-filter	out		
ip	msdp	sa-limit			
ip	msdp	shutdown			
ip	msdp	timer			
ip	multicast	boundary			
ip	multicast-routing				
ip	name-server				
ip	nat	pool			
ip	nat	translation	tcp-timeout		
ip	nat	translation	udp-timeout		
ip	ospf	authentication			
ip	ospf	authentication-key			
ip	ospf	bfd			

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ip	ospf	cost		
ip	ospf	dead-interval		
ip	ospf	hello-interval		
ip	ospf	message-digest-key		
ip	ospf	name-lookup		
ip	ospf	network		
ip	ospf	priority		
ip	ospf	retransmit-interval		
ip	ospf	shutdown		
ip	ospf	transmit-delay		
ip	pim	anycast-rp		
ip	pim	bfd		
ip	pim	bfd-instance		
ip	pim	bsr-border		
ip	pim	bsr-candidate		
ip	pim	dr-priority		
ip	pim	log-neighbor-changes		
ip	pim	neighbor-filter		
ip	pim	query-interval		
ip	pim	register-source		
ip	pim	rp-address		
ip	pim	rp-candidate		
ip	pim	sparse-mode		
ip	pim	spt-threshold		
ip	pim	spt-threshold	group-list	
ip	pim	ssm	range	
ip	prefix-list			
ip	protocol			
ip	proxy-arp			
ip	radius	source-interface		
ip	rip	v2-broadcast		
ip	route			
ip	routing			
ip	tacacs	source-interface		
ipv6	access-group			
ipv6	access-list			
ipv6	address			
ipv6	dhcp	relay	destination	
ipv6	enable			
ipv6	host			
ipv6	nd	managed-config-flag		
ipv6	nd	ns-interval		"ns" stands for "neighbor solicitation" per the neighbor discovery protocol
ipv6	nd	other-config-flag		
ipv6	nd	prefix		
ipv6	nd	ra	interval	"ra" stands for "router advertisement" per the neighbor discovery protocol
ipv6	nd	ra	lifetime	
ipv6	nd	ra	suppress	
ipv6	nd	reachable-time		
ipv6	nd	router-preference		
ipv6	neighbor			
ipv6	ospf	area		
ipv6	ospf	cost		
ipv6	ospf	dead-interval		

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ipv6	ospf	hello-interval	
ipv6	ospf	network	
ipv6	ospf	priority	
ipv6	ospf	retransmit-interval	
ipv6	ospf	transmit-delay	
ipv6	prefix-list		
ipv6	route		
ipv6	router	ospf	
ipv6	unicast-routing		
isis	hello-interval		"hello" messages are well known in the networking industry
isis	hello-multiplier		
isis	lsp-interval		
isis	metric		
isis	passive		
isis	passive-interface		
isis	priority		
is-type			
lacp	port-priority		
lacp	rate		
lacp	system-priority		
link	state	group	"link state" is a commonly used networking term, typically used in the context of link state routing protocols.
link	state	track	"track" is a commonly used networking term, as discussed in Appendix A.
lldp	holdtime		
lldp	receive		
lldp	reinit		
lldp	run		
lldp	timer		
lldp	tlv-select		
lldp	transmit		
load	interval		
log-adjacency-changes			
log-adjacency-changes			
log-adjacency-changes			
logging	host		
mac	access-group		
mac	access-list		
mac	address-table	aging-time	
mac	address-table	static	
mac-address			
max-connections			
maximum-paths			
maximum-paths			
neighbor	activate		
neighbor	allowas-in		
neighbor	default-originate		
neighbor	description		
neighbor	ebgp-multipath		
neighbor	fall-over	bfd	
neighbor	local-as		
neighbor	next-hop-self		
neighbor	password		
neighbor	peer-group		

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neighbor	peer-group	
neighbor	remote-as	
neighbor	remote-private-as	
neighbor	route-map	
neighbor	route-reflector-client	
neighbor	send-community	
neighbor	shutdown	
neighbor	soft-reconfiguration	
neighbor	timers	
neighbor	transport	connection-mode
neighbor	update-source	
neighbor	weight	
network	area	
no	snmp-server	
ntp	authenticate	
ntp	authentication-key	
ntp	server	
ntp	source	
ntp	trusted-key	
passive-interface	default	
passive-interface	<interface>	
passive-interface		
policy-map	type	control-plane
policy-map	type	qos
port-channel	load-balance	
port-channel	min-links	
priority-flow-control	mode	
private-vlan		
private-vlan	mapping	
ptp	domain	
ptp	priority1	
ptp	priority2	
ptp	sync	interval
radius-server	deadtime	
radius-server	host	
radius-server	key	
radius-server	retransmit	
radius-server	timeout	
redundancy	force-switchover	
route-map		
router	bgp	
router	isis	
router	ospf	
router	rip	
router-id		
router-id		
routing-context	vrf	
service	sequence-numbers	
set-overload-bit		
show	aaa	method-lists
show	aaa	sessions
show	arp	
show	bfd	neighbors

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show	clock			
show	dot1q-tunnel			
show	dot1x			
show	dot1x	all	summary	
show	dot1x	statistics		
show	environment	all		
show	environment	cooling		
show	environment	power		
show	environment	temperature		
show	etherchannel			
show	flowcontrol			
show	hostname			
show	hosts			
show	interfaces			
show	interfaces	capabilities		
show	interfaces	description		
show	interfaces	private-vlan	mapping	
show	interfaces	status		
show	interfaces	switchport		
show	interfaces	switchport	backup	
show	interfaces	transceiver		
show	interfaces	trunk		
show	inventory			
show	ip	access-lists		
show	ip	arp		
show	ip	bgp		
show	ip	bgp	community	
show	ip	bgp	neighbors	
show	ip	bgp	paths	
show	ip	bgp	peer-group	
show	ip	bgp	regexp	
show	ip	bgp	summary	
show	ip	community-list		
show	ip	dhcp	snooping	
show	ip	extcommunity-list		
show	ip	helper-address		
show	ip	igmp	groups	
show	ip	igmp	interface	
show	ip	igmp	snooping	
show	ip	igmp	snooping	groups
show	ip	igmp	snooping	mrouter
show	ip	igmp	snooping	querier
show	ip	interface		
show	ip	interface	brief	
show	ip	mfib		
show	ip	mroute		
show	ip	mroute	count	
show	ip	msdp	mesh-group	
show	ip	msdp	peer	
show	ip	msdp	rpf-peer	
show	ip	msdp	sa-cache	
show	ip	msdp	summary	
show	ip	nat	translations	

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show	ip	ospf			
show	ip	ospf	border-routers		
show	ip	ospf	database	database-summary	
show	ip	ospf	interface		
show	ip	ospf	neighbor		
show	ip	ospf	request-list		
show	ip	ospf	retransmission-list		
show	ip	pim	interface		
show	ip	pim	neighbor		
show	ip	pim	rp		
show	ip	pim	rp-hash		
show	ip	prefix-list			
show	ip	rip	database		
show	ip	rip	neighbors		
show	ip	route			
show	ip	route	summary		
show	ip	route	tag		
show	ipv6	access-lists			
show	ipv6	bgp			
show	ipv6	bgp	community		
show	ipv6	bgp	neighbors		
show	ipv6	bgp	summary		
show	ipv6	interface			
show	ipv6	neighbors			
show	ipv6	ospf			
show	ipv6	ospf	border-routers		
show	ipv6	ospf	interface		
show	ipv6	ospf	neighbor		
show	ipv6	prefix-list			
show	ipv6	route			
show	ipv6	route	summary		
show	ipv6	route	tag		
show	isis	database			
show	isis	interface			
show	isis	topology			
show	lacp	counters			
show	lacp	interface			
show	lacp	neighbor			
show	link	state	group		"link" is a commonly used networking term.
show	lldp				
show	lldp	neighbors			
show	lldp	traffic			
show	mac	access-lists			
show	mac	address-table			
show	mac	address-table	aging	time	
show	mac	address-table	count		
show	module				
show	monitor	session			
show	ntp	associations			
show	ntp	status			
show	policy-map	type	control-plane		
show	policy-map	interface	type	qos	
show	policy-map	interface	control-plane		

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show	port-channel	summary	
show	port-channel	traffic	
show	port-security		
show	port-security	address	
show	port-security	interface	
show	privilege		
show	ptp	clock	
show	ptp	parent	
show	ptp	time-property	
show	qos	maps	
show	radius		
show	redundancy	states	
show	reload		
show	role		
show	route-map		
show	snmp		
show	snmp	chassis	
show	snmp	community	
show	snmp	contact	
show	snmp	engineID	
show	snmp	group	
show	snmp	host	
show	snmp	location	
show	snmp	mib	
show	snmp	source-interface	
show	snmp	trap	
show	snmp	user	
show	snmp	view	
show	spanning-tree		
show	spanning-tree	blockedports	
show	spanning-tree	bridge	
show	spanning-tree	interface	
show	spanning-tree	mst	
show	spanning-tree	mst	configuration
show	spanning-tree	mst	interface
show	spanning-tree	root	
show	storm-control		
show	tacas		
show	track		
show	user-account		
show	users		
show	version		
show	vlan		
show	vlan	internal	usage
show	vlan	private-vlan	
show	vlan	summary	
show	vrf		
show	vrrp		
snmp	trap	link-status	
snmp-server	chassis-id		
snmp-server	community		
snmp-server	contact		
snmp-server	enable	traps	

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snmp-server	engineID	local		
snmp-server	engineID	remote		
snmp-server	group			
snmp-server	host			
snmp-server	location			
snmp-server	source-interface			
snmp-server	user			
snmp-server	view			
spanning-tree	bpdufilter			
spanning-tree	bpduguard			
spanning-tree	bridge	assurance		
spanning-tree	cost			
spanning-tree	guard			
spanning-tree	link-type			
spanning-tree	loopguard	default		
spanning-tree	mode			
spanning-tree	mst	configuration		
spanning-tree	portfast	bpdufilter	default	
spanning-tree	portfast	bpduguard	default	
spanning-tree	port-priority			
spanning-tree	transmit	hold-count		
spanning-tree	vlan			
spf-interval				
statistics	per-entry			
storm-control				
switchport	access	vlan		
switchport	backup	interface		
switchport	mode			
switchport	port-security			
switchport	port-security	maximum		
switchport	private-vlan	mapping		"private vlan" is a well-known industry term, as described in Appendix B
switchport	trunk	allowed	vlan	
switchport	trunk	native	vlan	
switchport	vlan	mapping		"mapping" in the vlan context is a well-known industry term
tacacs-server	host			
tacacs-server	key			
tacacs-server	timeout			
terminal	length			
terminal	monitor			
timers	basic			
timers	bgp			
timers	lsa	arrival		The link-state advertisement (LSA) is a basic communication means of the OSPF routing protocol for the Internet Protocol (IP).
timers	throttle	lsa	all	
timers	throttle	spf		
username	sshkey			
vlan	internal	allocation	policy	
vrf	definition			Virtual routing and forwarding (VRF) is a technology included in IP (Internet Protocol) network routers that allows multiple instances of a routing table to exist in a router and work simultaneously. IETF Internet Draft for RFC 3281 uses term "VRF" in this context.

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vrf	forwarding		Virtual routing and forwarding (VRF) is a technology included in IP (Internet Protocol) network routers that allows multiple instances of a routing table to exist in a router and work simultaneously. IETF Internet Draft for RFC 3281 uses term "VRF" in this context.
vrrp	authentication		
vrrp	delay	reload	
vrrp	description		
vrrp	ip		
vrrp	ip	secondary	
vrrp	preempt		
vrrp	priority		
vrrp	shutdown		"shutdown" is a widely used command word, as discussed in Appendix A
vrrp	timers	advertise	"advvertise" is a well-known industry term, and is used in the context of, for example, link state advertisements
vrrp	track		"track" is a widely used command word, as discussed in Appendix A